Modified PTO/SB/33 (10-05)

| PRE-APPEAL BRIEF REQUEST FOR REVIEW | Docket Number Q88807 | |
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| Mail Stop AF<br>Commissioner for Patents<br>P.O. Box 1450 Alexandria, VA 22313-1450 | Application Number 10/541,753 | Filed July 8, 2005 |
| | First Named Inventor Katsuhiko HIGASHINO | |
| | Art Unit 1713 | Examiner Henry S. HU |

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23373
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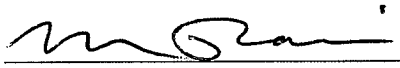
Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal

The review is requested for the reasons(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

☑ I am an attorney or agent of record.
Registration number 61,444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April 29, 2008
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**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Katsuhiko HIGASHINO, et al.

Docket No: Q88807

Appln. No.: 10/541,753

Group Art Unit: 1713

Confirmation No.: 3898

Examiner: Henry S. HU

Filed: July 8, 2005

For: CROSS-LINKED ELASTOMER COMPOSITION AND FORMED PRODUCT COMPOSED OF SUCH CROSS-LINKED ELASTOMER

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

**MAIL STOP AF - PATENTS**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the Pre-Appeal Brief Conference Pilot Program, and further to the Examiner's Office Action dated November 29, 2007, Appellants file this Pre-Appeal Brief Request for Review. This Request is also accompanied by the filing of a Notice of Appeal. Appeal at this stage of prosecution is proper because Appellants' claims have been twice rejected. 37 C.F.R. § 41.31(a).

At issue is whether the present claimed subject matter as described in the independent claims is rendered obvious by the disclosure of Minamino in view of Lidorenko; and the disclosures of Ohata, Amin '116 and Amin '107, each individually in view of Minamino and Lidorenko. Appellants respectfully submit that the rejections are improper and that the rejections should be withdrawn and the subject application allowed.

As of the Office Action dated November 29, 2007, claims 1-2, 4 and 7-9 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,974,845 ("Minamino") in view of SU 516126 A ("Lidorenko"). In addition, claims 1-2, 4 and 6-9 were also rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,430,103 ("Ohata"), U.S. Patent No. 5,444,116 ("Amin '116") or U.S. Patent No. 5,461,107 ("Amin '107"), each individually in view of Minamino and Lidorenko.

Independent claim 1 recites a crosslinkable fluorine rubber composition for plasma process comprising a crosslinkable fluorine rubber and a carbon fluoride filler, wherein the carbon fluoride filler is heat treated at 300-550°C in advance.

The preamble of claim 1 breathes life and meaning into the claims and distinguishes over the cited prior art, i.e., the claimed crosslinkable fluorine rubber composition imparts a molded article with plasma resistance. In this regard, Appellants disclose that conventional fillers do not provide sufficient resistance to $NF_3$ plasma treatment, $O_2$ plasma treatment and fluorine plasma treatment. For example, fillers such as carbon black, silica, barium sulfate and titanium oxide are taught to be ineffective. See Specification at page 2, lines 8-14.

Appellants also teach a carbon fluoride filler that is heat treated at 300-550°C in advance to enhance resistance to plasma treatment. In this respect, the heat treatment removes impure gas which can degrade the resistance to plasma of the carbon fluoride. See Specification at page 6, lines 10-15. Further, the unexpectedly superior plasma resistance obtained by employing a carbon fluoride filler heat-treated at 300-550°C in advance is demonstrated by Appellants' working Examples 1 and 2. The weight loss of the modified article of Example 2 employing a preheat-treated fluoride filler (thermally treated in advance at 350°C for 2 hours) is smaller than that of Example 1 employing a fluoride filler that was not heat treated in advance, upon exposure to each of high density F radical, $O_2$ plasma and $CF_4$ plasma treatment. See Specification at Table 4 at page 48. Moreover, a comparison of comparative Examples 1, 3 and 4 with the working Examples demonstrates the advantage of using the carbon fluoride filler of claim 1 as opposed to a conventional filler.

In contrast, Minamino discloses that, as the case demands, a filler *may* be blended with the composition. See Minamino at col. 6, lines 25-27. Minamino discloses six broad categories of conventional fillers (e.g., metal oxides, metal hydroxides, carbonates and silicates) and 33 specific fillers (e.g., titanium oxide, barium sulfate and carbon black). See id. at col. 6, lines 28-41. Within this generic list of fillers, Minamino includes carbon fluoride, but Minamino does not disclose heat treating any of the fillers at 300-550°C in advance.

Minamino also fails to disclose a single working Example or Comparative Example in which a carbon fluoride or any other filler is blended into the polymer composition. Further, Minamino does not teach or suggest that a carbon fluoride filler advantageously imparts plasma resistance to a molded article made from the polymer composition.

Ohata, Amin '116 and Amin '107 do not cure the deficiencies of Minamino.

Ohata discloses a "crosslinkable composition which comprises an internally crosslinked acrylic elastomer" and that a filler may be added to the composition, when required, and Ohata provides a generic list of conventional fillers. See Ohata at col. 4, at lines 6-22; Abstract. Therein, Ohata discloses carbon fluoride, but also lists fillers that do not have sufficient resistance to plasma treatment. Ohata also fails to disclose heat treating any of the fillers at 300-550°C in advance. Further, Ohata is silent with respect to imparting a crosslinkable composition with plasma resistance.

Similarly, Amin '116 and '107 do not disclose or suggest a composition suitable for plasma process or using a carbon fluoride filler that is heat-treated at 300-550 °C in advance.

The Examiner cites Lidorenko in an attempt to cure the above-described deficiencies.

According to its English Abstract, Lidorenko is directed to an electric battery containing a lithium anode, a carbon fluoride cathode and a non aqueous electrolytic solution. Specifically, Lidorenko discloses an electrode made by mixing powdered carbon fluoride with a polymeric binder and an electrically conductive additive, such as an acetylenic carbon black, pressing the mixture onto a lattice, then heating to the softening point of the polymeric binder.

The Examiner states that the "softening point" of at least some polymeric binders may overlap in scope with the claimed heat treatment temperature of 300-550 °C.

However, nothing within Lidorenko teaches, discloses, or fairly suggests a crosslinkable fluorine rubber composition for plasma process, and Lidorenko does not teach a heat treatment that is conducted at a set temperature range in advance to remove impure gases. Therefore, because Lidorenko concerns an electric battery and has nothing to do with a crosslinkable fluorine rubber composition for plasma process, it would not have been obvious to modify the references with the disclosure of Lidorenko (disclosing an electrode made by mixing powdered carbon fluoride with a polymeric binder and an electrically conductive additive, such as acetylenic carbon black, pressing the mixture into a lattice, and then heating to the *softening point* of the polymer) to arrive at the presently recited carbon fluoride filler that is heat treated at the specific temperature range of from 300-550°C in advance.

Thus, Appellants submit that the Examiner has not addressed why one of ordinary skill in the art would have had any reason to modify the carbon fluoride filler of Minamino, Ohata, Amin '116 and/or Amin '107 by conducting a heat treatment in at 300-550°C in advance. The

Examiner's statement that the composition of Lidorenko "can be useful as [a] cathode material of [a] high capacity electric battery" is not an adequate reason.

The Examiner has not articulated an adequate rationale for combining the prior art to attain the claimed composition, and the unexpectedly superior results demonstrate that the present composition is not a mere combination of familiar elements according to known methods that yield predictable results.

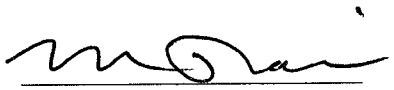
Further, Appellants submit that heating to the softening point of the polymer *in situ* (as per Lidorenko) is not compatible with preparing a "crosslinkable" elastomer composition in the first instance (for the reason that heating at 300-550 °C would tend to cure the elastomer so that it is no longer crosslinkable). In that case, combination of Minamino and Lidorenko would at least impair the intended function of Minamino (which is to provide a polymer composition crosslinkable with UV rays). More specifically, if the heat treatment is conducted after mixing the carbon fluoride filler with the polymer binder, the crosslinkable composition of the present claims cannot be obtained because the crosslinkable elastomer has already been crosslinked.

Furthermore, one of ordinary skill in the art would understand that the heat treatment described in Lidorenko is directed to heat treating the polymer binder, and that the heat treatment of the carbon fluoride filler is only circumstantial, because Lidorenko discloses that the mixture is heat treated up to the softening point of the polymer binder after mixing the polymer binder and the carbon fluoride filler.

Finally, even if the polymer disclosed in Lidorenko has a high softening point, and even if the temperature of heat treatment recited by the present claims were to overlap the softening point of the polymer binder of Lidorenko as the Examiner believes, and even if Lidorenko's filler was heat treated in advance, which is not taught by any of the references, Lidorenko still requires that the filler be heat treated *again* in order to soften the mixture with the polymer binder.

Accordingly, it is respectfully submitted that the claims on appeal are patentable over the cited art and withdrawal of the rejections upon review by the Pre-Appeal Panel is respectfully requested.

Respectfully submitted,



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